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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,289	09/29/2003	Christopher S. Moore	10519-110	3113

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EXAMINER	
BLACK, LINH	

ART UNIT	PAPER NUMBER
2163	

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/674,289	MOORE ET AL.	
	Examiner	Art Unit	
	LINH BLACK	2163	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/12/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This communication is in response to the document dated 9/29/2003. Claims 1-9 are pending in the application. Claims 1-3 are independent claims.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-9 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 3-7, 10 of U.S. Patent No. 6658438. Although the conflicting claims are not identical, they are not patentably distinct from

each other because both of the cases' main functions is "method for deleting stored digital data from write-once memory device" – the title, by over-writing at least a portion of the stored digital file a destructive pattern.

Claims Comparison Table	
10/674,289	USP 6658438
Claim 1: (a)-(c)	Claim 10: (a)-(c)
Claim 2: (a)-(c)	Claim 1: (a)-(c)
Claim 3: (a)-(c)	Claim 1: (a)-(c)
Claims 4-8, 9	Claims 3-7, 1c

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen (US 3668655), and further in view of Vining et al. (US 6377526).

In the specification, page 3, lines 20-28, Applicants teach "the memory cells of the write-once memory array are fabricated in an initial, unprogrammed digital state, and selected

memory cells can then be switched to an alternative, programmed digital state. In one example, the original, unprogrammed digital state can be identified as the Logic 0 state and the programmed digital state can be identified as the Logic 1 state (though the reverse is also possible). Because a memory cell cannot be erased once it is written, it is not possible to erase the files from a write-once memory array by restoring the associated memory cells to the Logic 0 state." and on page 7, lines 19-23, "Programmed digital state" is intended broadly to encompass one or more states. For example, a programmed digital state can equal the Logic 1 state in a binary storage system, or the Logic 1 or the Logic 2 state in a three-state digital system." Applicants also defines "delete" as "refers broadly to a command that has the effect of making a file difficult or impossible to read, regardless of how the delete command is implemented" – page 4, lines 8-10.

As per claim 1, Allen teaches providing a write-once memory array comprising a plurality of memory cells, wherein some of the cells are in an original digital state and others of the cells are in a programmed digital state, and wherein the states of the memory cells represent a stored digital file – col. 2, lines 2-29; col. 2, lines 56-65; col. 3, lines 45-49. However, Allen does not explicitly disclose: "receiving a delete command associated with the file" and "over-writing at least a portion of the stored digital file with a destructive pattern..." Vining et al. teach a method for selectively enabling writing of data multiple times onto a write-once read-many optical disk by a host system – col. 3, lines 25-27; Vining et al. teach "All previously written magnetic domains in the selected

user data sector or sectors would be reset to a "zero" value. The value of the Flag and of the SWF field would also be reset..." – col. 5, lines 57-59. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Allen's teaching with Vining et al.'s teaching to allow the rewrite of data on the write-once memory for better use of storage resources.

Regarding claims 4-8, the Examiner choose claim 1 as the parent claim.
As per claims 4-5, Allen teaches addressing information that identifies memory cell addresses associated with the stored digital file – col. 4, lines 4-8. However, Allen does not explicitly disclose: "at least a portion of the stored digital file that is over-written in (c) consists essentially of the addressing information". Vining et al. teach "The SCSI command which will allow a single file to be erased shall be a UNIQUE ERASE command (step 1200). The command shall have the following capabilities. (26) 1) Be able to erase all blocks starting from a specified Logical Block Address to the end of the disk. (27) 2) Be able to erase a number of contiguous logical blocks as specified by the user. (28) 3) Be able to accept Physical Block Addressing and/or Logical Block Addressing. (29) 4) There shall be no limit on the number of times this command shall be able to be executed during the lifetime of the disk. (30) 5) The logical construction of this command shall be similar in form and functionality to the `erase" [19H] currently described in the SCSI ANSI specification (ANSI X3.131-1994). (31) 6) The command shall enable the user to rewrite a previously written sector either by reading the contents of the SWF field and/or the contents of the Flag field (located between the Sector

Header and Data record), (step 1210) The firmware of the drive shall check the data returned but shall not inhibit the writing to (i.e. erasure of) that sector if the flags are set to indicate that user data is resident within the sector" – col. 6, line 61 to col. 7, line 17; "The present invention satisfies this need by providing a method and apparatus such that data on an optical disk cannot be inadvertently overwritten, while at the same time providing the capability to erase completely a given data file or the entire disk surface. Additionally, new data may be written to the erased portions, taking advantage of the entire disk capacity" – col. 3, lines 15-22. It is also obvious that the stored digital file has the address information in order for operations such as read/write etc... be performed toward the file. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Allen's teaching with Vining et al.'s teaching to allow the rewrite of data on the write-once memory for better use of storage resources.

As per claims 6-7, Allen does not teach overwriting of memory cells. Vining et al. teach: "The ISO standard defines seven disk types (as discussed in the Background) which are coded onto the disk in byte 7 of the data field of a sector (FIG. 4). It is this disk type that indicates the disk is WORM, and is in effect a coded rewrite-protect switch. The proposed new erasable WORM media would have this byte set to a new value of "erasable WORM". This disk type would mark the disk as write once for all standard commands, but would also enable an optical drive 100, which contained firmware implementing the present invention, to act on two new commands which would allow the

user to erase either a single file or an entire disk surface. (10) To perform erasure of user data, the information contained in the Flag and SWF fields would be read by the drive but ignored by the new drive firmware. That is, the setting of these fields would not inhibit the drive from overwriting the user data area of the sector" – col. 5, lines 35-63. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Allen's teaching with Vining et al.'s teaching to allow the rewrite of data on the write-once memory for better use of storage resources. In addition, with the usage of the rewrite-protect switch with the contained firmware would allow any portion of memory cells to be over-written substantially and simultaneously.

As per claim 8, Allen does not teach "multiple space blocked of the memory cells associated with the stored digital file". Vining et al. teach: "The SCSI command which will allow a single file to be erased shall be a UNIQUE ERASE command (step 1200). The command shall have the following capabilities. (26) 1) Be able to erase all blocks starting from a specified Logical Block Address to the end of the disk. (27) 2) Be able to erase a number of contiguous logical blocks as specified by the user. (28) 3) Be able to accept Physical Block Addressing and/or Logical Block Addressing. (29) 4) There shall be no limit on the number of times this command shall be able to be executed during the lifetime of the disk. (30) 5) The logical construction of this command shall be similar in form and functionality to the `erase" [19H] currently described in the SCSI ANSI specification (ANSI X3.131-1994). (31) 6) The command shall enable the user to rewrite a previously written sector either by reading the contents

of the SWF field and/or the contents of the Flag field (located between the Sector Header and Data record), (step 1210) The firmware of the drive shall check the data returned but shall not inhibit the writing to (i.e. erasure of) that sector if the flags are set to indicate that user data is resident within the sector" – col. 6, line 61 to col. 7, line 17; "The present invention satisfies this need by providing a method and apparatus such that data on an optical disk cannot be inadvertently overwritten, while at the same time providing the capability to erase completely a given data file or the entire disk surface. Additionally, new data may be written to the erased portions, taking advantage of the entire disk capacity" – col. 3, lines 15-22. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Allen's teaching with Vining et al.'s teaching to allow the rewrite of data on the write-once memory for better use of storage resources.

Claims 2-3, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen (US 3668655), Vining et al. (US 6377526), and further in view of "The Route to 3-D chips" by G. Zhang, "3D-ROM".

As per claims 2-3, Allen teaches providing a write-once memory array comprising a plurality of memory cells, wherein some of the cells are in an original digital state and others of the cells are in a programmed digital state, and wherein the states of the memory cells represent a stored digital file – col. 2, lines 2-29; col. 2, lines 56-65; col. 3, lines 45-49. However, Allen does not explicitly disclose: "receiving a delete command

associated with the file" and "over-writing at least a portion of the stored digital file with a destructive pattern..." Vining et al. teach a method for selectively enabling writing of data multiple times onto a write-once read-many optical disk by a host system – col. 3, lines 25-27; Vining et al. teach "All previously written magnetic domains in the selected user data sector or sectors would be reset to a "zero" value. The value of the Flag and of the SWF field would also be reset..." – col. 5, lines 57-59. However, Allen and Vining et al. do not explicitly teach a three dimensional memory. Zhang teaches 3D-ROM are low cost, large capacity, fast performance, suitable for embedded memory in "system-on-a-chip", broad applications – page 8; logic state "0" or "1" of 3D-MPROM cell – page 15. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Allen's teaching, Vining et al.'s teaching, with Zhang's teaching to allow the rewrite of data on the write-once 3D-memory for better use of storage resources.

As per claim 9, Allen teaches providing a write-once memory array comprising a plurality of memory cells, wherein some of the cells are in an original digital state and others of the cells are in a programmed digital state, and wherein the states of the memory cells represent a stored digital file – col. 2, lines 2-29; col. 2, lines 56-65; col. 3, lines 45-49. However, Allen does not explicitly disclose: over-writing a plurality of memory cells. Vining et al. teach a method for selectively enabling writing of data multiple times onto a write-once read-many optical disk by a host system – col. 3, lines 25-27; Vining et al. teach "All previously written magnetic domains in the selected user

data sector or sectors would be reset to a "zero" value. The value of the Flag and of the SWF field would also be reset..." – col. 5, lines 57-59. However, Allen and Vining et al. do not explicitly teach a three dimensional memory. Zhang teaches 3D-ROM are low cost, large capacity, fast performance, suitable for embedded memory in "system-on-a-chip", broad applications – page 8; logic state "0" or "1" of 3D-MPROM cell – page 15. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Allen's teaching, Vining et al.'s teaching, with Zhang's teaching to allow the rewrite of data on the write-once 3D-memory for better use of storage resources.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LINH BLACK whose telephone number is 571-272-4106. The examiner can normally be reached on 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on 571-272-1834. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LINH BLACK
Examiner
Art Unit 2163

March 13, 2006

Primary Examiner
Art Unit 2167